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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/622,401	08/16/2000	Hans Goran Evald Martin	P/3658-10	3531

2352 7590 03/15/2004

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EXAMINER	
LEE, SHUN K	
ART UNIT	**PAPER NUMBER**
2878	

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/622,401	MARTIN ET AL.	
	Examiner	Art Unit	
	Shun Lee	2878	pw

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *57-62,64,65,67-78,81,82,84-86,88-100 and 102-106* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *57-62,64,65,67-78,81,82,84-86,88-100 and 102-106* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *8/16/00 & 12/31/02* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4 February 2004 has been entered.

Claim Objections

2. Claim 104 is objected to because of the following informalities: "energy" on line 24 in claim 104 should probably be --radiation-- (see line 4). Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 57-61, 65, 67, 69-73, 77, 81, 82, 84, 86, 88, 90-94, 98, 100, and 102-106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters *et al.* (US 5,550,375) in view of Chen ("Combustible gas sensor fabricated with 3D-microtechnology", pg. 362-365) and Dschen (DE 41 10 653 A1).

In regard to claims **102**, **81**, **82**, **84**, **98**, and **105**, Peters *et al.* disclose (Figs. 1-3) a gas detector comprising:

(a) a flat base plate (12) formed of a plastic material (column 3, lines 59-67);

(b) a gas cell (*i.e.*, free space or cuvette compartment; column 2, lines 26-30) formed by the flat base plate (12) and a hollow body of plastic material (column 2, lines 47-49) extending from a surface of the flat base plate (12), the flat base plate (12) and the hollow body being constructed to define an enclosure for receiving a volume of gas to be evaluated (it should be noted that in at least one disclosed embodiment, the enclosure comprises the cavities in front of the entrance and exit slits, column 7, lines 1-12, and that a slit is defined[1] as a "long, straight, narrow cut or opening", see Figs. 1A, 2A, and 3);

(c) a source of electromagnetic radiation (*i.e.*, radiation source 7; column 2, lines 36-57) coupled for emission into the gas cell;

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[1] The American Heritage® Dictionary of the English Language, Third Edition copyright © 1992 by Houghton Mifflin Company. Electronic version licensed from INSO Corporation; further reproduction and distribution restricted in accordance with the Copyright Law of the United States. All rights reserved.

(d) a coating (column 2, lines 31-35) on an inner surface of the hollow body formed of at least one metal layer which forms a highly reflective surface with regard to the electromagnetic radiation;

(e) an electromagnetic radiation detector (*e.g.*, a thermopile 8, 11; column 3, lines 23-27; column 7, lines 1-12) which is formed integrally with the flat base plate (12) and located within the enclosure (again it should be noted that in at least one disclosed embodiment, the enclosure comprises the cavities in front of the entrance and exit slits; column 7, lines 1-12).

While Peters *et al.* also disclose (column 3, lines 23-27; column 7, lines 1-12) that the electromagnetic radiation detector is a thermopile (8, 11), the gas detector of Peters *et al.* lacks that the thermopile is mounted on a three-dimensional topographical structure wherein first and second conductive metal layers are located on the topographical structure by application at first and second incidence angles, respectively, wherein the first and second incidence angles are different and other than 90°, so as to form a thermoelectric element (*i.e.*, thermocouple). However, thermopiles are well known in the art. For example, Dschen teaches (Figs. 1, 2, 3a-3c) a thermopile on a three-dimensional topographical structure formed by a plurality of thermoelectric junctions (3, 4) on a first plane (5) and a second plane (6) can be formed by the application of two different layers (1, 2) at first and second incidence angles (α_1, α_2). As another example, Chen teaches (column 1, lines 31-60) a thermopile structure with the hot and cold junctions (*i.e.*, thermocouples) on different planes (introduction on pg. 362), in order to obtained an improved sensitivity thermopile (conclusions on pg. 364).

Therefore, it would have been obvious to one having ordinary skill at the time of the invention to form the thermopile in the gas detector of Peters *et al.* on a three-dimensional topographical structure by application of the first and second conductive metal layers at first and second incidence angles, in order to obtained an improved sensitivity thermopile as taught by Chen (Dschen).

In regard to claims **104, 57, 58, 60, 61**, **77**, and **106**, Peters *et al.* in view of Chen and Dschen is applied as in claims 102, 81, 82, 84, 98, and 105 above. Peters *et al.* also disclose (column 2, lines 36-57; column 3, lines 45-58) that shaped parts can be produced by a LIGA process (*i.e.*, lithographic etching, electroplating, and casting).

In regard to claim **59** which is dependent on claim 104, Peters *et al.* also disclose (column 2, lines 53-57) that the method further comprises applying said electromagnetic radiation detector (*i.e.*, IR radiation receiver) on a limited surface portion of the surface of the base plate, and applying required electric conductors or electric circuits (*i.e.*, electronic elements) to the thermal element on the limited surface portion.

In regard to claim **65** (which is dependent on claim 104) and claim **86** (which is dependent on claim 102), Peters *et al.* also disclose (column 2, lines 50-57) electronic elements for amplifying the detector signals. Inherent in detector signal amplifying electronic elements are detector connection pads in order to provide electrically conductive paths for transmitting the detector signals from the metal layers of the thermopile detector to the amplifying electronic elements for amplification.

In regard to claims **67** and **71-73** (which are dependent on claim 57) and claims **88** and **92-94** (which are dependent on claim 81), while Peters *et al.* also disclose

(column 3, lines 23-27; column 7, lines 1-12) that the electromagnetic radiation detector is a thermopile (8, 11), the method and apparatus of Peters *et al.* lacks a detailed description of the thermopile as an array (*i.e.*, n columns by m ridges) of conductive ridges (having a first thermocouple junction on the ridge upper surface and a second thermocouple junction at an intermediate surface located between mutually adjacent conductive ridges) with each conductive ridge electrically series interconnected. However, thermopiles are well known in the art. For example, thermopile is defined[1] as a "device consisting of a number of thermocouples connected in series or parallel, used for measuring temperature or generating current" and a thermocouple is defined[1] as a "thermoelectric device used to measure temperatures accurately, especially one consisting of two dissimilar metals joined so that a potential difference generated between the points of contact is a measure of the temperature difference between the points". As another example, Dschen teaches (abstract; Fig. 1) an array (*i.e.*, n columns by m ridges) of thermocouple junctions (*i.e.*, a thermopile) having a first thermocouple junction on the ridge upper surface and a second thermocouple junction at an intermediate surface located between mutually adjacent conductive ridges. As a further example, Chen teaches (column 1, lines 31-60) a thermopile structure with the hot and cold junctions (*i.e.*, thermocouples) on different planes (introduction on pg. 362), in order to obtained an improved sensitivity thermopile (conclusions on pg. 364). Therefore, it would have been obvious to one having ordinary skill at the time of the invention to form the thermopile in the method and apparatus of Peters *et al.* as an array (*i.e.*, n columns by m ridges) of conductive ridges (having a first thermocouple

junction on the ridge upper surface and a second thermocouple junction at an intermediate surface located between mutually adjacent conductive ridges) with each conductive ridge electrically series interconnected, in order to obtained an improved sensitivity thermopile as taught by Chen (Dschen).

In regard to claims **69** and **70** (which are dependent on claim 67) and claims **90** and **91** (which are dependent on claim 88), it is inherent in the thermopile of Peters *et al.* that electrically insulated surface sections (without both said first and said second metal layers) are formed at said intermediate conductive surfaces located at surface sections surrounding and adjacent to the thermopile of said base structure since it is clear that the thermopile is of a finite extent and located at one region in order to observe one or a few wavelengths (see column 3, lines 28-31).

In regard to claim **100** which is dependent on claim 102, Peters *et al.* also disclose (column 2, lines 53-57; column 3, lines 28-33) rows of radiation receivers.

In regard to claim **103** which is dependent on claim 102, Peters *et al.* also disclose (column 2, lines 36-57) that the circuit elements electrically coupled to the conductive metal layers and located outside the gas cell enclosure.

6. Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peters *et al.* (US 5,550,375) in view of Chen ("Combustible gas sensor fabricated with 3D-microtechnology", pg. 362-365) and Dschen (DE 41 10 653 A1) as applied to claim 104 above, and further in view of Larsson (Micro Structure Workshop 1996, pp. 5.1-5.8).

In regard to claim **62** which is dependent on claim 104, the modified method of Peters *et al.* lacks forming the mold for the shaping operation by mechanically working a

substrate, wherein the configuration of the substrate is complementary with respect to the topographical structure to be formed. Microreplication techniques are known in the art. For example, Larsson teaches (Fig. 1; sections on Microreplication technology and Micromachining of the master) to choose the type of master fabrication technique (*e.g.*, micromachining instead of LIGA which is expensive) depending on application, costs, development time and needed accuracy. Therefore, it would have been obvious to one having ordinary skill at the time of the invention to use micromachining in the modified method of Peters *et al.*, in order to use a less expensive master fabrication technique.

7. Claims 64, 68, 76, 78, 85, 89, 97, and 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters *et al.* (US 5,550,375) in view of Chen ("Combustible gas sensor fabricated with 3D-microtechnology", pg. 362-365) and Dschen (DE 41 10 653 A1) as applied to claims 67, 88, 98, 102, and 104 above, and further in view of Baxter (US 4,111,717).

In regard to claim **64** (which is dependent on claim 104) and claim **85** (which is dependent on claim 102), Peters *et al.* also disclose (column 2, lines 31-35) that the surface of the hollow body should be coated with metal layer having good reflectivity in the spectral range used (*i.e.*, IR radiation). The modified method and apparatus of Peters *et al.* lacks that the interior of the hollow body is coated with the same metal as the topographical structure of the detector at the same time. Baxter teaches (column 3, lines 17-31) that a thermopile is coated with a metal that serves the dual purpose of forming a cold thermocouple junction and a heat (*i.e.*, IR radiation) reflector. Therefore, it would have been obvious to one having ordinary skill at the time of the invention to

coat the hollow body surface with the same metal used to form the thermocouple junctions of the thermopile in the modified method and apparatus of Peters *et al.* in order to obtain a hollow body surface having good reflectivity in the spectral range used (*i.e.*, IR radiation).

In regard to claim **68** (which is dependent on claim 67) and claim **89** (which is dependent on claim 88), the modified method and apparatus of Peters *et al.* lacks that the topographical structure including the ridges are positioned relative to incident electromagnetic waves so that the waves irradiate the upper surfaces of the ridges but the ridges shadow the intermediate conductive surfaces against incident electromagnetic waves. Baxter teaches (column 3, lines 46-55) to provide a reflective area overlying a portion of the cold junctions in order to reduce the influence of stray radiation on the cold junctions. Therefore, it would have been obvious to one having ordinary skill at the time of the invention to provide a reflective area (*e.g.*, hot junctions) overlying a portion of the cold junctions on intermediate conductive surfaces in the modified method and apparatus of Peters *et al.*, in order to reduce the influence of stray radiation on the cold junctions (*i.e.*, the cold junctions will be in the shadow of the hot junctions on conductive ridges).

In regard to claim **76** (which is dependent on claim 68) and claim **97** (which is of dependent on claim 89), it is inherent in the modified method and apparatus of Peters *et al.* that the first metal has a first reflection coefficient with respect to the electromagnetic waves and the second metal has a second reflection coefficient with respect to the electromagnetic radiation. The modified method and apparatus of

Peters *et al.* lacks that parts of the detector are positioned relative to the incident electromagnetic waves and the metal layers and the conductive ridges are so positioned that the metal having the lowest of the first and second reflection coefficients covers the side surfaces of the ridges that face the incident electromagnetic radiation. Baxter teaches (column 3, lines 46-55) to provide a reflective area (*e.g.*, gold) overlying a portion of the cold junctions in order to reduce the influence of stray radiation on the cold junctions. It should be noted that by definition, a material with a low reflection coefficient has less reflected radiation than a material with a higher reflection coefficient. It should also be noted that stray radiation comprises of reflected incident radiation. Therefore, it would have been obvious to one having ordinary skill at the time of the invention to position the surface of said detector relative to incident electromagnetic radiation in the modified method and apparatus of Peters *et al.* so as to provide a reflective area (*e.g.*, the first metal forming the cold junction with a lower reflection coefficient than the second metal forming the cold junction) overlying a portion of the cold junctions, in order to reduce the influence of stray radiation on the cold junctions.

In regard to claim **78** (which is dependent on claim 76) and claim **99** (which is dependent on claim 98), while Peters *et al.* also disclose (column 3, lines 23-27; column 7, lines 1-12) that the electromagnetic radiation detector is a thermopile (8, 11), the modified method and apparatus of Peters *et al.* lacks that the first and second metal layers of the thermopile respectively comprise gold covering chromium. However, thermopiles are well known in the art. For example, thermopile is defined[1] as a "device consisting of a number of thermocouples connected in series or parallel, used for

measuring temperature or generating current" and a thermocouple is defined[1] as a "thermoelectric device used to measure temperatures accurately, especially one consisting of two dissimilar metals joined so that a potential difference generated between the points of contact is a measure of the temperature difference between the points". As another example, Baxter teaches (column 2, line 65 to column 3, line 40) it is well known in the art that thermopiles comprise of a plurality of hot and cold thermocouple junctions formed by the joining of two electrical conductors of different composition such as for example chromium alloy or gold. Therefore, it would have been obvious to one having ordinary skill at the time of the invention that the thermopile in the modified method and apparatus of Peters *et al.* comprises different types of conductors (*e.g.*, two well known dissimilar thermocouple metals such as gold and chromium) in order to form the series connected thermocouple junctions of the thermopile.

8. Claims 74, 75, 95, and 96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters *et al.* (US 5,550,375) in view of Chen ("Combustible gas sensor fabricated with 3D-microtechnology", pg. 362-365) and Dschen (DE 41 10 653 A1) as applied to claims 67 and 88 above, and further in view of Baxter (US 4,111,717) and Grinberg *et al.* (US 4,922,116).

In regard to claims **74** and **75** (which are dependent on claim 67) and claims **95** and **96** (which are dependent on claim 88), the modified method and apparatus of Peters *et al.* lacks a heat absorbent layer (*e.g.*, carbon) covering the upper surface of each of the ridges; and a heat reflecting layer (*e.g.*, a metal) covering the intermediate conductive surfaces between adjacent ridges. Baxter teaches (column 3, lines 46-55)

to provide a reflective area (*e.g.*, gold) overlying a portion of the cold junctions in order to reduce the influence of stray radiation on the cold junctions. Grinberg *et al.* teach (column 9, lines 60-64; column 11, lines 35-38) that the upper surface of the bridges is covered with a heat-absorbent layer (*e.g.*, carbon black, metallic gold black, or black paint) in order to increase the temperature variation. Therefore, it would have been obvious to one having ordinary skill at the time of the invention to provide a heat-absorbent layer on upper surface of respective conductive ridges and heat-reflecting layer on the cold junctions at intermediate conductive surfaces in the modified method and apparatus of Peters *et al.*, in order to reduce the influence of stray radiation and increase the temperature variation as taught by Baxter and Grinberg *et al.*

Response to Arguments

9. Applicant's arguments filed 4 February 2004 have been fully considered but they are not persuasive.

Applicant argues (pg. 15-18 of remarks filed 4 February 2004) that Peters *et al.* do not teach or suggest "an electromagnetic radiation detector formed on a three-dimensional topographical structure integral with the base plate and located *inside* the chamber" and that there is "no suggestion that the gas can anywhere other than in the free space, and in particular, not in the cavity with the detector" of Peters *et al.* since "some kind of barrier" is inherent in the structure of Peters *et al.* to isolate the detector from the gas cavity otherwise: (a) toxic or explosive gas would be free to escape to the environment; (b) the device of Peters *et al.* would be rendered inoperative to respond as soon as the gas contains methane (*i.e.*, if gas from the free space could migrate into the

detector cavity, the gases in the two cavities would have different instantaneous compositions, and thus different absorption spectra); and (c) that some "special reason" to have the gas enter the second cavity was not mentioned in the patent. Examiner respectfully disagrees. First it should be noted that applicant's argument's argument that toxic or explosive gas would be free to escape to the environment relies on the implicit unsupported assumption that the cavities in front of the slits of Peters *et al.* are open to the environment which have not been explained, justified, or supported by evidence. In addition, different absorption spectra from different instantaneous compositions does not prevent the device of Peters *et al.* from responding as soon as the gas contains methane since methane in either of the two "different" instantaneous compositions would cause a change in the device response of Peters *et al.*

Further, Peters *et al.* disclose (Figs. 1-3) a gas cell (*i.e.*, "The free space is covered by a plate which is joined in a sealing manner to the shaped part. The gas to be tested is introduced into, and discharged from, the space through orifices. The free space serves as a cuvette compartment for the gas to be tested"; column 2, lines 26-30) formed by the flat base plate (12) and a hollow body of plastic material (column 2, lines 47-49) extending from a surface of the flat base plate (12), the flat base plate (12) and the hollow body being constructed to define an enclosure for receiving a volume of gas to be evaluated. Peters *et al.* also state (column 6, line 64 to column 7, line 12) that "On the outside of the entrance and exit slits, the shaped part contains a cavity having coated walls for radiation conversion within the wavelength range under consideration ... Radiation source and radiation receiver are arranged at those points of

the cover plate, which, when the plate is placed on the single piece shaped part, are situated above the cavities in front of the entrance and exit slits", and (column 3, lines 23-27) that " ... In front of the radiation receiver there may be disposed, if required, an exit slit of suitable width". It is important to recognize that the enclosure (formed by the flat base plate 12 joined in a sealing manner to the single piece shaped part) includes cavities (contained in the shaped part) adjacent optional exit slits (4,11) where the radiation detectors (8, 11) are positioned. Thus it is clear that in at least one disclosed embodiment, thermopile radiation detectors (8, 11) are located on the surface of the flat base plate (12) inside the enclosure (*i.e.*, at cavities adjacent to the slits).

Peters *et al.* further state (column 2, lines 58-67) that "The gas to be tested can be introduced into the free space through one orifice and be discharged through another orifice. The connection pieces through which a e.g., pressurized gas is fed to the sensor are preferably disposed on the sensor housing. It may be expedient to leave the narrow sides of the free space entirely open, in order to permit free convection. The convection can be promoted, if the sensor has a suitable spatial arrangement, by the heat generated by the radiation source. In addition, devices may be provided which encourage convection", (column 3, lines 4-7) that "In order to extend the path of the IR radiation within the gas, it is possible to introduce, into the multi-frequency or the single frequency IR radiation outside the free space, a gas cuvette or a gas-filled waveguide", and (column 6, lines 36-40) that "Part of the exhaust gas passed into the free space flows past the IR radiation source. As a result, the radiation source is cooled and the flow of the exhaust gas through the free space is encouraged". Thus Peters *et al.*

explicitly teach that the flow path of the gas sample comprises an optional sample gas cuvette or an optional sample gas waveguide such as the IR radiation source cavity. In addition, Figs. 1A, 2A, and 3 clearly illustrate that there are no barriers located at the slits (3, 4, 10) which is consistent with the plain meaning of slit as used within the patent of Peters *et al.* Thus Peters *et al.* teach slits (*i.e.*, long, straight, narrow cut or opening 3, 4, 10 in Figs. 1A, 2A, and 3) which provide the advantages of promoting convection and/or extending the IR radiation path length. Therefore, applicant's arguments are not persuasive.

Conclusion

10. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SL

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